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Aerial view of LLNL's main site in Livermore, CA.

Introduction

At Lawrence Livermore National Laboratory (LLNL), a premier research facility in the San Francisco Bay Area, we conduct some of the nation's most innovative science and technology. Our primary focus is national security—ensuring the safety and reliability of the nation's nuclear stockpile, developing capabilities to strengthen U.S. military forces and homeland security, and preventing worldwide spread and use of weapons of mass destruction. Work also extends to pressing national needs such as cleaning up the environment, battling cancer, decoding the human genome, studying global warming, and exploring the universe.

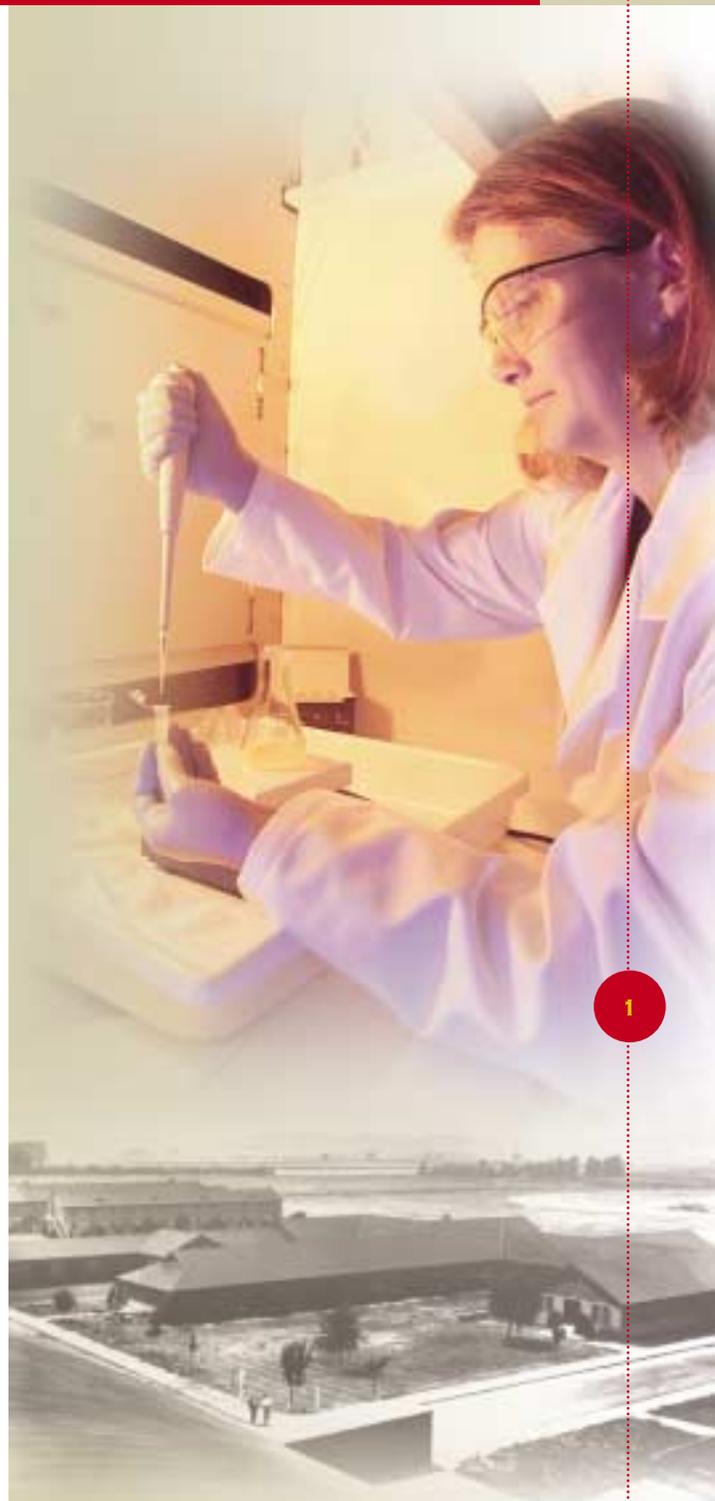
To conduct science on a grand scale, we require cutting-edge computational and experimental tools and state-of-the-art research facilities. Our National Ignition Facility is the world's largest laser. Our supercomputers are among the most powerful in the world. A wide range of administrative and operational functions—from efficient business practices to high-tech computer security to the safe use and disposal of hazardous materials—support our research work.

As a national center of applied science and technology, we serve diverse customers, and we strive to meet the needs of many stakeholders. While our principal sponsor is the U.S. Department of Energy's National Nuclear Security Administration, our interactions range from the broad scientific community and the leaders of the federal government to our own local community and employees. Outreach efforts play an important role in establishing and maintaining such interactions. These efforts occur at all levels throughout our Laboratory and are central to the mission of several key organizations, as described in this brochure.

Our outreach efforts are considerable and include informational and participatory processes, where appropriate, to assure community input and concerns are considered. It is important that issues related to our programs and operations are discussed with the community in an effective and timely manner, and that we meet all applicable legal and regulatory requirements for environmental public participation and public information.

We are committed to enhancing community welfare, quality of life, and educational excellence. Our Laboratory is an active participant in Bay Area economic development efforts, educational outreach, diversity programs, charitable events, and volunteer services. We strive to be perceived as an intellectual asset and a helpful neighbor and want the communities around us to be proud that we are here.

Additional resources related to community outreach are available on the Web sites listed in Appendix A. For further information, please contact our Public Affairs Office at (925) 422-4599.



The original Laboratory site opened as a branch of the University of California Radiation Laboratory in 1952 at a deactivated Naval Air Station.



Site 300 in the foothills east of the main site.

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LLNL is a national resource for science and technology.

About the Lab

Our Laboratory's main site is situated on the eastern edge of the City of Livermore, about 50 miles southeast of San Francisco. The surrounding region is generally called the Tri-Valley (composed of Livermore, Amador, and San Ramon Valleys). Sandia National Laboratories/California is located immediately south of LLNL. Approximately 20 miles east of our main site is the City of Tracy in San Joaquin County, and nestled in the hills between Livermore and Tracy is our Site 300 Experimental Test Site.

Since our founding in 1952, we have been managed by the University of California (UC). Being part of the University helps to foster intellectual innovation and scientific excellence. We have a long tradition of programmatic achievement that focuses on meeting national needs. Our University connection allows us to recruit and retain a diverse world-class workforce and partner with the UC's extensive research and academic community. These factors are essential to our sustained scientific and technical excellence.

The majority of our work is conducted for the National Nuclear Security Administration (NNSA) within the U.S. Department of Energy (DOE). The NNSA carries out DOE's national nuclear security responsibilities, including maintenance of a safe, secure, and reliable stockpile of nuclear weapons and associated materials capabilities and technologies; promotion of international nuclear safety and nonproliferation; and administration and management of the naval nuclear propulsion program. Other key Lab sponsors include other parts of the DOE, the U.S. Department of Homeland Security, and the U.S. Department of Defense.

Much of our work is executed in partnership with industry, academia, and other national laboratories. Partnering activities span a wide range—from very large-scale strategic alliances to licensing of individual technologies, academic research, educational outreach, and support for the small business community. Often partnerships and collaborations are the most cost-effective way for us to accomplish programmatic goals. In addition, we have a responsibility to move appropriate technologies our Laboratory has developed into the marketplace, where the advances can have the maximum positive impact on the U.S. economy or other important national priorities.

Our principal product is scientific and technical information, which we disseminate as broadly as possible. Our wealth of knowledge and state-of-the-art research facilities are shared with the community through our extensive array of formal and informal educational outreach programs at the K–12, community college, and university levels; diversity-related outreach programs; business partnerships; and economic development activities. We have numerous agreements with universities and community colleges to support industry-driven workforce training. These activities meet the needs of U.S. high-technology industry and the missions of our Laboratory.

Our employees are active in a broad range of civic, educational, and professional organizations at the local, regional, state, and national level. They also give generously to the community through their extensive volunteer work and charitable donations. Our Laboratory ranks as one of the single largest charitable contributors in the Tri-Valley.

Economic Impact

With an annual budget of \$1.6 billion, a job base of more than 8,000 people, and payroll base of over \$660 million, we have a significant impact on the local and regional economy. Nearly all of our funding comes from outside the region, primarily from the federal government. Roughly \$1 billion of this is spent within California. Money we spend institutionally is re-spent in California by our employees and contract workers, and the businesses that receive it. Whether it's dollars spent or jobs created, our Laboratory is a significant contributor to the region's economic well-being and quality of life.



We are the largest employer in the City of Livermore and the fourth largest in Alameda County. Much of our workforce also resides in three neighboring counties: Contra Costa, San Joaquin, and Stanislaus. We provide stable employment and top-quality benefits to our employees and their families. Historically our rate of employment has been fairly steady because we are generally buffered from normal commercial economic downturns.

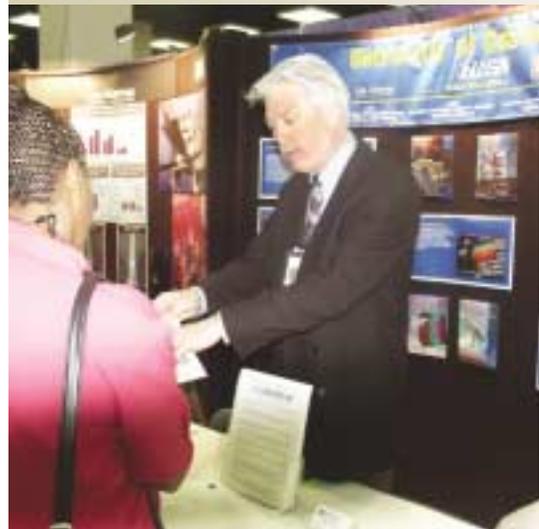
In fiscal year 2003, we spent about \$600 million on the procurement of goods and services from outside sources. Of that amount, more than \$260 million was spent in California and nearly \$153 million was spent in the San Francisco Bay Area.

The Small Business Program Office in our Procurement and Materiel Department helps all categories of small business enterprises at both the state and federal level become competitive for LLNL subcontracts. Our supplier management program includes a database of hundreds of small businesses from the local area. In support of DOE's policy to fully integrate small businesses in DOE's core mission and programs, we negotiate annual goals in prescribed socioeconomic categories. About \$220 million in annual procurements goes to small business enterprises. In addition, we participate in numerous small-business-related outreach efforts, which include but are not limited to:

- Small Business Administration Showcases
- U.S. Army Corp of Engineers Veterans Small Business Conference
- Women's Business Enterprise National Conference
- California Hispanic Chamber of Commerce Conference
- California Black Chamber of Commerce Conference
- U.S. Department of Commerce, Minority Enterprise Development Week
- Jet Propulsion Laboratory "High-Tech" Small Business Conference
- UC Berkeley's Small Business Trade Fair
- National Reservation Economic Summit
- American Indian Business Trade Fair
- U.S. DOE Small Business Conference



Downtown
Livermore.



LLNL participates in the annual U.S. DOE small business conference.

Enhancing U.S. Industrial Competitiveness



Extreme Ultraviolet Lithography is the Lab's largest technology transfer commercialization project that involves a partnership with Sandia and Lawrence Berkeley National Labs and a consortium of computer chip manufacturers.

We are home to a broad and rich source of technologies that would be difficult to develop solely with private funds. By partnering with U.S. industry, we are able to transfer Lab-developed technologies to the marketplace, thus benefiting the U.S. economy. The Industrial Partnerships and Commercialization Office helps our programs enter into partnerships with industry and transfer LLNL technology on behalf of the UC and DOE. A prime example of our industrial outreach with the surrounding community is the Tri-Valley Technology Enterprise Center, a business incubator that provides offices and administrative and management support to start-up companies, and facilitates technology commercialization and transfer programs at the national labs.

We support small business partnerships because they benefit our community and enable us to apply our valuable resources where they can make a major difference. Our Laboratory is among the leading DOE labs in collaborating with small business to receive awards under the DOE Small Business Innovation Research and Small Business Technology Transfer programs. In addition, we participate in similar programs with other federal agencies. We also work with small businesses through Collaborative Research and Development Agreements. More than 40 percent of our industrial partnerships are with small businesses and start-up companies. Additionally, we seek to patent and license our intellectual property to promote commercialization and application of LLNL inventions. Of our active patent and copyright licenses, about 25 percent are with California companies.

We have numerous informal relationships with local and state organizations that benefit the community and state, including:

- UC and other university technology transfer offices
- Venture capital firms
- Consulting networks
- DOE and other federal technology transfer offices
- Professional affiliations (e.g., Licensing Executive Society and Association of University Technology Managers)



LLNL's chromosome painting technology, licensed exclusively to Vysis, is enabling the evaluation and management of certain genetic diseases.



- National Aeronautics and Space Administration Girvan Institute
- Local economic development organizations such as the Alameda County Economic Development Alliance for Business, Bay Area Economic Forum, Technology Ventures Corporation, and Bay Area Science and Innovation Consortium.

The San Francisco East Bay has rapidly become a new center for high-tech businesses, and the Tri-Valley is a core of this growth, with nearly 20 percent of its workforce in technical jobs. This percentage is second in the Bay Area only behind Silicon Valley at 40 percent. Our technologies have been utilized to establish a number of high-tech Bay Area companies, some of which are located in the East Bay. Examples include: Cepheid (Sunnyvale, California), MicroFluidic Systems, Inc. (Pleasanton, California), Ocellus Technologies (Livermore, California), and PowerStor Corporation (Dublin, California). Many other companies outside the immediate area are also based on or use LLNL technology. Examples include DakoCytomation (Colorado), Endress+Hauser (Indiana), GE Interlogix-Sentrol (Oregon), NOMOS Corporation (Pennsylvania), ORTEC Products (Tennessee), and Vysis, Inc. (Illinois). For more information on these technology transfer partnerships, refer to Appendix B.

An example of successful technology transfer is with Metal Improvement Company, Inc. (MIC) of New Jersey. In 1997 MIC, an established provider of conventional shot peening services to industry, entered into a Collaborative Research and Development Agreement with our Laboratory to develop a commercially viable laser-peening process based on our high-energy and high pulse-rate laser. The collaboration was successful, and now metals can be laser peened effectively and economically, resulting in stronger metals. This process is expected to extend the service lifetime of some metal parts, such as aircraft engine fan blades, by a factor of three to five or more. Pushing this collaboration a giant step further, MIC researchers worked with our Laboratory to develop the Lasershot Marking System to imprint permanent, high-resolution identification marks on safety-critical parts and laser peen forming. This could open up a whole new frontier in manufacturing. In 2001, MIC finalized a contract with a major aerospace company for laser peening and broke ground for a new facility in Livermore. Since that time, the facility has tripled in size. Laser peening and laser marking applications are being explored for aviation parts, medical devices, and automotive components.

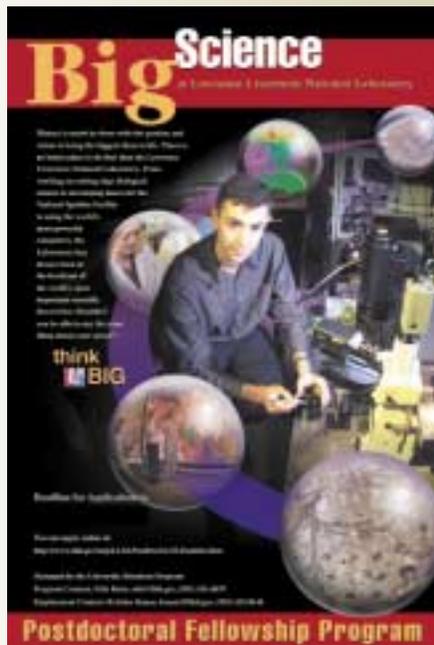
“Our collaboration with LLNL on the laser peening technology has exceeded our every expectation. With their help, we were able to bring this exciting technology to the point of commercialization. Our company is well positioned now to bring the benefits of laser peening to our worldwide metal-working industry consumers. We look forward to identifying future manufacturing technologies to collaborate on with LLNL.”

Gerald Nachman,
President & CEO, Metal Improvement Co., Inc.



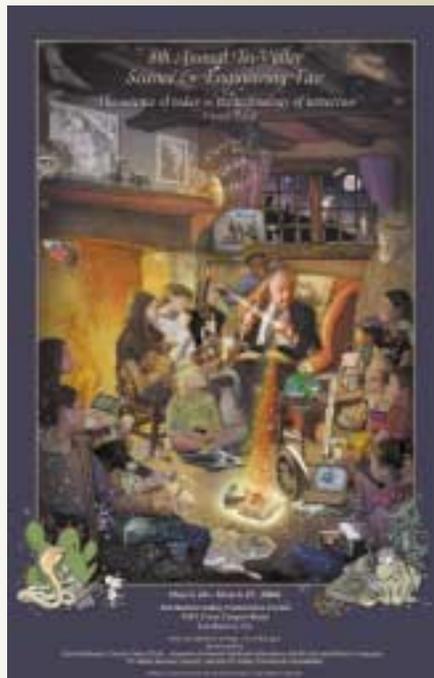
Advanced laser peening technology developed by researchers at LLNL and MIC is expected to produce major savings and reduced maintenance for aircraft parts.





LLNL provides recent Ph.D.s with opportunities to broaden their education, continue their training, and participate in leading-edge scientific research.

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LLNL co-sponsors the annual Tri-Valley Science & Engineering Fair that attracts over 300 middle and high school students from throughout the Tri-Valley.

Partners in Education

As a part of the University of California and as a national laboratory, we shoulder significant science education responsibilities. Our Laboratory has long been committed to enhancing education for the benefit of the nation and our local communities. We are home to several university-focused scientific research institutes and other unique facilities that support hundreds of ongoing projects with faculty, postdoctoral fellows, and graduate students. By making our research facilities and staff accessible to the academic and industrial communities, we provide valuable opportunities to visiting researchers, while we strengthen our scientific and technical base. We offer numerous student programs at the pre-college, undergraduate, graduate, and Ph.D. levels to encourage scientific and engineering careers and serve as a workforce pipeline for highly specialized skills. Our collaborations with academia, in particular UC, are extensive. Through our University Relations Program and its six university research institutes, we encourage and expand research collaborations with universities and other research organizations. By facilitating the flow of ideas and people between institutions, and by making our unique facilities and expertise available to students and faculty, we hope to address problems that are of interest to the broad research community, and to solve complex problems of importance to the nation.

The UC Davis Department of Applied Sciences, located at LLNL, enables us to attract and train students in special scientific and technical disciplines needed to pursue our mission. The Department of Applied Sciences allows students and university professors to work with our sophisticated resources and engage the very large, difficult scientific and technical challenges of our time. We also have a close affiliation with the UC's 10th campus in Merced, which is expected to eventually serve 25,000 students. We are contributing to Merced's definition of its science and engineering programs, consulting on the physical plant, helping plan programs for their Sierra Nevada Research Institute, and serving on search committees for senior staff. Once the Merced campus is in operation, we expect to collaborate on research projects, student internship programs, and joint appointments that provide teaching opportunities for our personnel. Over time, UC Merced should become an important source for future employees.

Our Laboratory was recently named one of "Best Places to Work for Postdocs," according to *The Scientist* readers' survey (February 2004). Recent Ph.D.s. are provided with opportunities to broaden their education, continue their training, and participate in leading-edge scientific research here at the Laboratory. Under our institutional Postdoctoral Program, we place some 150 postdocs in a rich variety of program assignments on a year-round basis. We also have openings for a limited number of postdocs in our prestigious Postdoctoral Fellowship and Herbert York Postdoctoral Fellowship programs.

Most of our community-based educational outreach is provided by the Science and Technology Education Program, the Edward Teller Education Center, and the Public Affairs Office. These organizations work together to leverage LLNL resources in support of local communities. Community educational outreach projects typically engage over 10,000 participants each year—both students and teachers—and are highlighted in Appendix C.

- Our Science and Technology Education Program (STEP) supports the science educational needs of our local and regional communities by improving science skills with grades K–12 and community college science outreach and educator activities. STEP seeks to influence students to consider a college education, and also stimulates teachers and school administrators, through local and regional educational partnerships, to encourage more students to pursue science and technology careers after high school.
- The Edward Teller Education Center (ETEC), dedicated in September 2003, is an educational partnership between the UC Office of the President, UC Davis, UC Merced, and our Laboratory that provides opportunities for professional development to K–12 teachers and community college instructors, by working with participating school districts within the greater Tri-Valley, Central Valley, and Sacramento Valley.
- Our Public Affairs Office manages the Discovery Center, School Tour program for 4th and 5th graders, and annual Tri-Valley Science and Engineering Fair. Public Affairs also conducts numerous other community outreach programs and serves as an information conduit for local schools seeking volunteer assistance on various educational programs, including school-specific science fairs, career fairs, and classroom speakers.

“The commitment by the Lab to science and technology education spans from kindergarten to high school, incorporates the community college system, has strong ties to the UC system, and includes programs for adult community members. Such educational relationships form powerful bonds that benefit both the national laboratory and the community,”

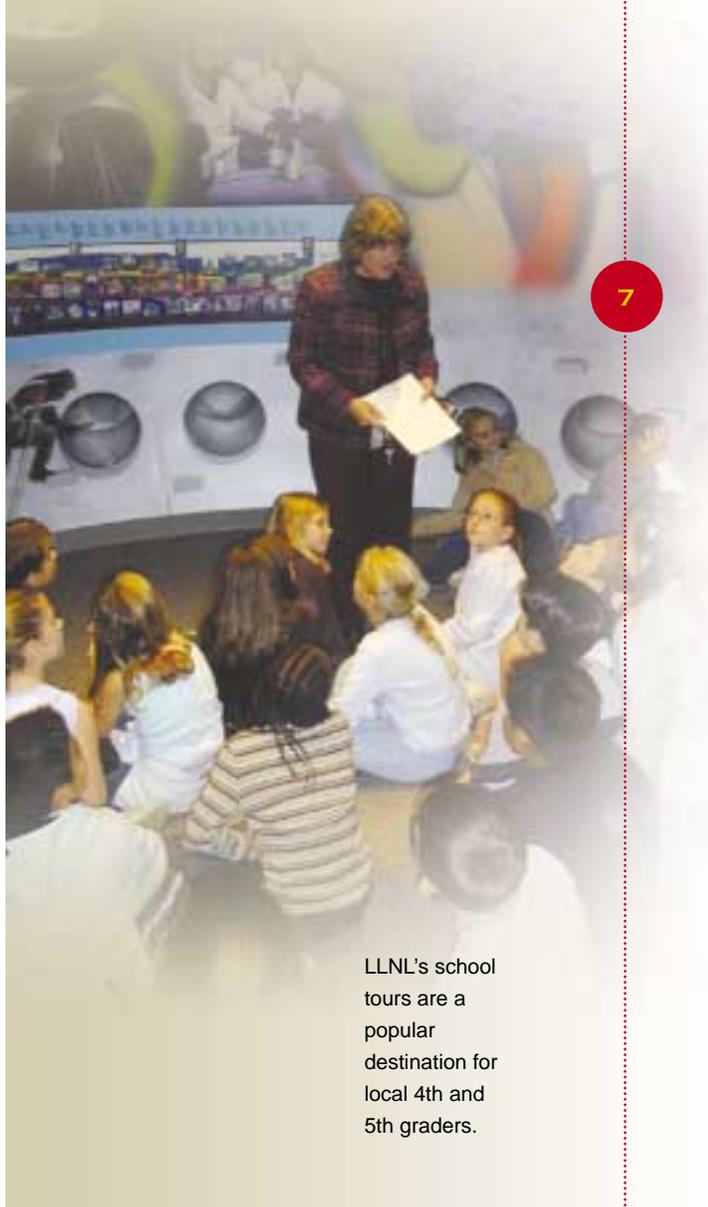
Julie Orvis,
Elected Trustee, Livermore Valley Joint Unified School District Board

Numerous other Laboratory organizations also participate in educational outreach to local communities.

- Plant Engineering has a strong bond with California State University California Maritime Academy, the first four-year institution in California to offer a degree in facilities management. Joining with other companies such as Exxon, PG&E, ARCO Marine, and the U.S. Coast Guard in an industrial advisory board, we helped create the four-year facilities management curriculum. This degree program provides Plant Engineering with a future workforce of trained professionals and the California Maritime Academy with an ongoing internship program at LLNL for its students. Educational outreach by individual Plant Engineering employees also extends to teaching and lecturing within the Pleasanton Unified School District, at Chabot Community College for local apprenticeship programs, and at California State University campuses.
- Employees from the Environmental Protection Department participate in educational outreach efforts to increase the awareness in Bay Area communities and schools about conservation and recycling. Our environmental specialists also make numerous visits to schools—from elementary to college level—in the Bay Area, South Bay, and Central Valley of California, providing



Teacher professional development provided by STEP and ETEC.



LLNL's school tours are a popular destination for local 4th and 5th graders.



Fun with Science provides interactive science experiments right in the classroom.

insight to environmental careers, science, natural resources, environmental regulatory issues, and environmental pollution.

- As part of the Computation Directorate's East Bay Society for Technical Communication outreach project, our Laboratory has provided technical writing instruction to Fremont High School in Oakland and to developmentally challenged students at Livermore High School. In addition, we are piloting a five-session technical writing program for juniors at Granada High School in Livermore. The program will be expanded to nine weeks in the 2004/2005 school year, and will be taught by Granada teachers.

We have developed a number of memorandums of agreement with community colleges to support workforce training to meet our needs and the needs of the U.S. high-technology industry. These highly successful and innovative programs are addressing the critical shortage of skilled technical personnel. Within our local community, we have a memorandum of agreement with the Chabot–Las Positas Community College District to engage industry to collaboratively evaluate future scientific, technical, and industrial workforce skill needs; apply joint capabilities and resources and provide unique, innovative industry-driven technical training and retraining opportunities; and promote cooperation with other educational institutions, including K–12 schools. Through these efforts enhanced or new programs have been developed at both the Chabot and Las Positas college campuses.

“The Laboratory provides Las Positas with a wealth of expertise through its scientists and engineers who teach at the college as adjunct faculty in the college’s Physics, Astronomy, Mathematics, and Engineering Departments, which benefits literally hundreds of students every year.”

Karen Halliday,
President, Las Positas College

We also helped to enhance the machinist program at Chabot College upgrading the shop with new equipment and expanding industrial participation to provide updated industry-driven curriculum. In a related effort, we worked with Granada High School to enhance its machinist program, one of the few remaining in the region, thus helping students better prepare for technical training at the community college level. At Las Positas College, a laser technologist certificate program was developed and implemented with our assistance. The essential hands-on laboratory courses are taught at our Laboratory in laser-equipped laboratories, and a LLNL laser specialist is retained by the college as the trainer. This program supports laser industrial workforce needs, including those of the National Ignition Facility.

Helping to develop computer skills for local teachers.



Diversity Outreach

We interact with diverse communities as a resource for employment, education, and commercial ventures in an effort to increase the representation of women and minorities in the workforce. Workforce diversity is a management priority and a key element in our institutional planning. Our outreach efforts include professional and community organizations as well as educational institutions, both at the local and national levels:

- Access Job Fair for the Disabled
- American Indian Higher Education Consortium
- American Indian Science and Engineering Society
- American Indian tribal colleges
- Asian Diversity, Inc.
- Asian Pacific Personnel Association
- Bay Area Apprentice Coordinators Association
- Bay Area Job Developer Consortium
- Bay Area Urban League
- California School for the Deaf
- Expanding Your Horizons for Young Women
- Hispanic serving institutions
- Historically black colleges and universities
- National Association for Equal Opportunity in Higher Education
- National Consortium for Educational Access
- National Organization of Black Chemists and Chemical Engineers
- National Physical Science Consortium
- National Society of Black Engineers
- National Society of Black Physicists
- Northern California Diversity Forum Science and Engineering Alliance
- Organization of Chinese Americans
- Science and Engineering Alliance
- Society for Hispanic Engineers
- Society of Mexican American Engineers and Scientists
- Society for the Advancement of Chicanos and Native Americans in Science
- Society for Women Engineers

Partnerships with minority institutions continue to be strengthened. Our research collaboration programs with historically black colleges and universities, the Science and Engineering Alliance, Hispanic serving institutions, and American Indian tribal colleges develop and promote productive and mutually beneficial scientific collaborations with the nation's minority institutions. Collaborations link accomplished faculty and students from these institutions with our principal investigators. A major goal is to increase the number of minority students pursuing science and technology careers, particularly in disciplines that are important to us and the DOE. Our participation in several of these programs target minority students for our scholar employment program and provide educational support through scholarship awards.

We also work with "majority" academic institutions to identify promising women, minorities, and other candidates for employment. For example, this year at UC Berkeley, UC Irvine, UC Los Angeles, Purdue University, the University of Illinois, the University of Michigan, and Massachusetts Institute of Technology, informational sessions were held for campus diversity groups to heighten



Multi-cultural celebration at LLNL's annual Diversity Day on the Green.



A Lab laser scientist gives Hispanic students from central California an overview of LLNL's laser program.

LLNL conducts research collaborations with historically black colleges and universities and other minority institutions.



students' awareness of our scientific research and to encourage them to seek careers in the fields that support our mission. In addition, scholarships are awarded to students at these institutions as part of our efforts to recruit a diverse pool of applicants.

We strongly encourage and support employee-managed network groups to promote diversity awareness and understanding, and we provide funding to these groups for cultural awareness activities as well as matching scholarship funds. Many of these networking groups are active in the regional community. As one example, Amigos Unidos, our Latino diversity group, is partnering with Livermore and Granada high schools and Junction Avenue Middle School in the Livermore Valley Joint Unified School District to provide a speaker outreach program for English language development classes. Employees of Hispanic descent attend classes and discuss their school-to-career choices and experiences, providing positive role models for the students.

“Lab Amigos Unidos speakers have experienced the challenges and risks of growing up bicultural and/or bilingual in the United States, and can empathize with the difficulties our students face today. Additionally, speakers focus on the opportunities provided by education and the importance of positive decision-making. This proactive approach to life is an inspiration to all who listen.”

Dianna Renz,
Teacher, Granada High School

LLNL Amigos Unidos member addressing local high school students on career choices.



Community Relations

At LLNL we recognize the importance of close relationships with local neighbors, community leaders and groups, and public officials. Our Public Affairs Office fosters greater public awareness of the Laboratory through proactive and responsive community relationships that focus on the timely release of information to important audiences. Public Affairs also seeks the concerns and comments of those audiences and strives to be of general assistance to community members who want information about our Lab.

- Our Laboratory maintains close contact with the mayors, city managers, and city council members of Livermore, Pleasanton, Dublin, San Ramon, and Tracy. In addition, we host a Special Community Leader Day each summer, providing an overview of recent programmatic accomplishments and operational issues of interest to the community. A quarterly newsletter is distributed to local elected officials, civic leaders, and general community members to provide information about LLNL. A welcome package is also mailed quarterly to new residents in Livermore, Pleasanton, Dublin, and Tracy, encouraging them to tour our Laboratory.
- Our Public Affairs Office maintains active memberships in the Livermore, Pleasanton, San Ramon, Dublin, and Tracy chambers of commerce, with representation on the board of the Livermore Chamber of Commerce. Public Affairs also participates in the Valley Study Group, a local civic group made up of residents from the Tri-Valley, and helps to strengthen relations with other local clubs and organizations by arranging for employees to speak at their engagements.
- The Discovery Center and Community Tours provide the public an opportunity to learn about our programs, technical accomplishments, state-of-the-art facilities, and history. Special tours and events are also hosted to bring community leaders and individuals to specific sites around our Laboratory. One example is our Family Days Open House, held every few years. In addition to employees bringing their family and friends on site, there is a special guest day for community and education leaders. Our Laboratory also offers a regularly scheduled community television program to bring important LLNL research to broad community audiences and conducts free community lectures on a periodic basis.



Members of the news media touring the National Ignition Facility Optics Processing Development Laboratory.



Director Michael Anastasio addresses the audience at Community Leader Day.



Children and adults enjoy displays and demonstrations during LLNL Family Open House.



Controlled access for the portion of East Avenue that bisects LLNL and Sandia.

Site and Environmental Planning

We have rigorous, comprehensive, and well-documented site planning and environmental processes for both our main site and Site 300—a key element of which is stakeholder participation. Our Institutional Facilities Manager’s Office and planning staff interact frequently with planning departments of the cities of Livermore and Tracy, Alameda and San Joaquin counties, as well as neighboring Sandia Lab on matters relating to both sites. Where necessary, issues are also coordinated with other agencies that are impacted by our site plans. In preparing our long-range site development plan, input and comments are collected and considered, and appropriate issues are incorporated in any final documents. Site 300 management and planning staff also work closely with both commercial and residential neighbors to maintain positive and harmonious relations. This involves reciprocal visits, briefings, and tours of the site, along with continuing personal initiatives.

As an example of our working relationships, we received the utmost cooperation from Alameda County and the City of Livermore in planning and completing controlled access for the portion of East Avenue that bisects LLNL and Sandia. Close coordination of this statutory real estate transaction and integration of the needs of adjoining landowners consistent with Laboratory security requirements allowed the Alameda County Board of Supervisors to approve this action. DOE control of the roadway has greatly enhanced the physical security of both laboratories.

Our Laboratory has a long history of attention to environmental stewardship, which is reflected in the awards and recognition we have garnered from the U.S. Environmental Protection Agency, state environmental regulatory agencies, and the DOE. In 2003, we received federal and DOE energy and water management awards for reducing fuel usage through our Transportation Systems Management Program. We also received the 2003 U.S. Environmental Protection Agency Region 9 Green Government Award for educational exhibits demonstrating applications of photovoltaic cells and for use of such cells to illuminate parking lots.

Our Environmental Protection Department (EPD) ensures that current Laboratory research projects do not adversely affect the public or the environment, while at the same time working to clean up historic contamination at our two sites to meet current environmental standards. Our EPD experts



Lab scientists inspecting waste containers for integrity.



Lab environmental biologists conduct field work.



LLNL waste treatment facility.

provide quality assurance and environmental education, ensure regulatory compliance, and facilitate public participation in our environmental management. They also contribute their expertise to a variety of city, county, regional, and state agency environmental and regulatory policy makers, such as dealing with leaking underground fuel tanks and alternative fuels that do not contribute to groundwater contamination, and work collaboratively with environmental specialists at other national laboratories, UC, and in private industry on environmental projects of mutual concern.

- EPD's Environmental Restoration Division develops and applies innovative, state-of-the-art approaches to restore the environment, and in so doing, serves as a resource for environmental restoration technology. The Division's well-characterized and instrumented test beds are used by our scientists and engineers as well as by other organizations across the country.
- The Operations and Regulatory Affairs Division ensures that our programmatic activities incorporate species protection and wildlife monitoring measures, as necessary, so that these special environmental concerns are addressed. Under an agreement between the DOE and the U.S. Fish and Wildlife Service, 160 acres of Site 300 land have been designated as the *Amsinckia Grandiflora* Reserve. This provides critical habitat for more than 300 species of plants and 95 species of mammals, birds, reptiles, and amphibians.
- The Radioactive and Hazardous Waste Management Division provides an institutional focus for implementing technologies to manage all hazardous, radioactive, and mixed wastes generated at our facilities. The Division continually develops and improves methods for managing such wastes to ensure the smallest possible environmental impact.

Our Laboratory management places significant emphasis on timely, effective communication and interactions with the local community on matters related to environment, safety, and health. Primary responsibility for this communications effort rests with EPD's Environmental Community Relations Office. Environmental Community Relations helps us meet applicable legal and regulatory requirements for our environmental public participation and public information activities. We make extensive use of public workshops and meetings to help local communities learn of environment, safety, and health issues as well as proposed decisions and solutions related to our operations. For further information about Environmental Community Relations, refer to Appendix D.



Air monitoring stations are part of LLNL's environmental surveillance network.



The Western Burrowing Owl is one of the species being protected by the Lab.



EPD team inspecting waste drums.



A NARAC emergency-response team.

Contributing to Community Safety and Security

We are home to a wealth of technology that has been developed, field-tested and deployed in support of public safety and homeland security, both on a national basis and for the benefit of the State of California.

- Since 2002, we have been providing technical support to the California Highway Patrol (CHP) to develop methods for ensuring the safe delivery of large fuel trucks and methods for stopping fuel trucks if they are hijacked by terrorists. Field tests are under way.
- Our Laboratory responds regularly when local Customs and Coast Guard officials at the San Francisco Airport and the Port of Oakland receive unusual alerts on their radiological pagers. We have field-tested a number of portable radiation monitors at both locales to assist in the detection of weapons of mass destruction. In addition, we are working with the CHP to develop additional radiation detection technology to prevent smuggling of radioactive material into the state.
- Our Homeland Security Organization is developing biological assays to help the California agricultural community deal with emerging livestock diseases. To date we have developed detection technologies to rapidly identify tularemia (rabbit fever), Exotic Newcastle disease, and salmonella. The ability to quickly detect these diseases (in hours rather than weeks) will save the agricultural industry millions of dollars.
- Our Forensic Science Center has developed a number of chemical and explosive detection technologies, and has also responded to a number of special law enforcement cases in the state (i.e., the Fremont bombing case and "Angel of Death" case). Additionally, the Center is working with a number of state agencies to assist in and train on the detection of and response to weapons of mass destruction.
- Our National Atmospheric Release Advisory Center (NARAC) has conducted real-time emergency response assessments for a number of state emergencies over the past two decades. NARAC can predict the probable spread of airborne hazards, thereby assisting emergency response managers in deciding protective actions. NARAC monitored the 1999 Chevron refinery fire and the 1998 Tracy tire fire. Its research models are also used to predict the spread of California wildfires. NARAC has supported several joint terrorist training exercises for the state and is partnering with five cities in a pilot project to better plan for and respond to the release of chemical or biological agents.
- In conjunction with UC Davis, the State Department of Health and Human Services, and myriad other state emergency response organizations, we are developing a proposal for advanced triage facilities and new bio-detection and bio-surveillance systems for hospitals. In the event of a biological attack, these new systems would allow hospitals to continue to operate.

Our Fire Department, which provides personnel and equipment for firefighting, search and rescue, and hazardous material and emergency medical services for our main site and Site 300, has mutual and automatic aid agreements with the cities of Livermore, Pleasanton, and Tracy; Alameda County; the California



LLNL is developing radiation detection technology for inspecting cargo containers.

Division of Forestry; and the State of California. It also manages and operates the Alameda County Regional Emergency Communication Center. The Center provides emergency fire and medical dispatch services for the Alameda County Emergency Management Services District, Alameda County Fire Department, Alameda City Fire Department, Fremont Fire Department, Camp Parks Fire Department, and the Union City Fire Department. In addition, our paramedic ambulance service is available to Alameda County, as needed.

In May 2004, 10 of our firefighters were honored by the National Nuclear Security Administration for their "heroic actions" in fighting two wildfires in Southern California last October. Three strike teams provided assistance to the crews battling the Grand Prix fire in San Bernardino County and the Cedar fire in San Diego County. A strike team was again dispatched to battle wildfires in Southern California in April 2004.

We adhere to stringent requirements set by the DOE to ensure emergency preparedness and rapid response to any emergency. We have memorandums of understanding with Eden Hospital and Valley Care Medical Center in Alameda County, under which we commit to annual refresher training of the hospital emergency room staff on the treatment of contaminated patients. Additionally, we co-sponsor community and public school fire-prevention programs that are taught by our firefighters. Each year an employee evacuation exercise is held, during which all buildings are evacuated, our self-help program is activated, and our Emergency Management Center is tested. An annual integrated emergency preparedness exercise is also conducted to demonstrate the abilities of our various emergency response organizations during an on-site emergency. In addition, our emergency preparedness extends to participation in emergency response exercises with local emergency and regional services. We have also partnered on an emergency preparedness "Shelter, Shut, Listen" campaign that includes an annual mailing to Tri-Valley residents and businesses.

"The City of Livermore is home to one of the nation's most prestigious research facilities. We have had a long-standing and successful relationship with the Livermore Laboratory and work closely with their staff on emergency and security management and other issues affecting our community."

Linda Barton
City Manager, City of Livermore

Our Security Department provides both our main site and Site 300 with personnel and equipment for the protection of employees, materials, and classified information. Security's Protective Force Division regularly meets with local law-enforcement agencies to discuss incident command, communication protocols, and response concepts specific to our Laboratory. In addition, these meetings provide fundamental support for our mutual-aid agreements with the Livermore Police Department, Alameda County Sheriff's Department, California Highway Patrol, San Joaquin County Sheriff's Office, Federal Bureau of Investigation, and Sandia National Laboratories/California. Our Laboratory periodically conducts exercises with these agencies to ensure response effectiveness.



LLNL security police officers.



Lab firefighters responding to mutual aid request.



Lab employees generously support families in need.

Helping Others

As previously mentioned, we employ more than 8,000 workers who reside primarily in the Tri-Valley and in San Joaquin County. Our employees are active volunteers within their own communities and hold a range of community positions such as elected officials, classroom volunteers, nonprofit board members, and service club members.

In addition to numerous acts of employee volunteerism, we sponsor an annual fund-raising campaign for nonprofit agencies called HOME (Helping Others More Effectively). We have been raising monies through the HOME Campaign for 27 years. Since 1995, the HOME Campaign has raised more than \$1 million annually for community charities.

"I have always been impressed with the caliber of personnel the Lab attracts. They are citizens very much involved in their neighborhoods and communities as a whole. I have been especially impressed with the Lab's involvement with young people and the encouragement given to students to pursue science and technology careers."

Lynne Leach,
Businesswoman and Former State Assemblywoman

We continue to be the largest single workplace supporter of the Tri-Valley Community Fund through our HOME contributions. The Community Fund is dedicated to raising and distributing local charitable contributions to human service, educational, cultural, and recreational organizations located throughout Livermore, Pleasanton, Sunol, Dublin, San Ramon, Danville, and Alamo. We are also the biggest blood donor in Alameda and Contra Costa counties. Blood drives occur four times a year. Numerous other charitable programs, some of which are listed below, occur on an annual basis throughout the Laboratory.

- American Heart Association
- Breast Cancer
- Buy a Book, Help a Child
- Cycletrons Bicycle Giveaway
- Daffodil Days
- For Pet's Sake
- Holiday Card Fund
- Juvenile Diabetes Research
- Brighter Holidays
- Teddy Bear Drive
- Toys for Children
- Week of Caring

Brighter Holidays is a prime example of employee volunteerism and community outreach. The program, which started in 1989 with just a few local Livermore families, served 600 people from 137 families in nine counties in December 2003. Our Engineering Directorate's Holiday Card Fund, a 40-year old program, helps to put the holiday spirit in the hearts of low-income and home-



bound seniors, donating money to the Senior Services Center of Livermore. Approximately 150 seniors benefited this past year. Carpenters from Plant Engineering, as well as the employee Piecemakers quilting group, dedicate volunteer time and energy into crafting handmade wooden cradles and toolboxes and sewing and crocheting doll blankets for charity. Another Lab organization, Defense & Nuclear Technologies, has a long-standing Toys for Children program that last year donated more than 1,500 toys, infant clothing, and new gifts to needy families. Defense & Nuclear Technologies employees work in conjunction with five prominent agencies, including Tri-Valley Haven for Women, Child Abuse Prevention Council of Contra Costa County, Oakland Children's Hospital Foundation, San Joaquin County Prevention Services, and Council for the Spanish Speaking, to reach needy children.

Appendix A. LLNL Web Site Resources

With a commitment to openness and information dissemination, our Laboratory maintains a publicly accessible external home page that provides insight into our organization, programs, operations, job opportunities, and outreach programs. Many of our Web pages have won awards from Internet organizations or have been cited as "best practices" within the DOE.

Education

(<http://www.llnl.gov/llnl/001index/03ed-index.html>)

Edward Teller Education Center

(<http://etec.ucdavis.edu/>)

Emergency Management

(http://www.llnl.gov/es_and_h/hsm/doc_22.01/doc11-01.html)

Environmental Community Relations

(<http://www-envirinfo.llnl.gov/>)

Industrial Partnerships and Commercialization Office

(<http://www.llnl.gov/IPandC/>)

Jobs

(http://jobs.llnl.gov/prod_index.html)

News and Public Affairs

(<http://www.llnl.gov/llnl/001index/06news-index.html>)

Partnership Opportunities

(<http://www.llnl.gov/llnl/01opp/partner.html>)

Publications

(<http://www.llnl.gov/llnl/001index/08pub-index.html>)

Procurement & Materiel Department

(<http://www.llnl.gov/procurement/>)



Annual employee fun run to kick off the HOME Campaign.



LLNL's Web site is a resource for information on science, technology, employment, business opportunities, community programs, and educational opportunities.



PowerStor's aerogel-based product is a truly unique line of supercapacitors whose breakthrough resistance makes them ideal for pulse-power and electronic circuitry applications that other supercapacitors cannot support.

Appendix B. Technology Transfer Partnership

We have both a social and contract responsibility to move appropriate technologies developed in the course of our mission work into the marketplace, where the advances can have the maximum positive impact on the U.S. economy or other important national priorities. The following list highlights some of our recent technology transfer successes.

- PowerStor® Corporation (Dublin, California) is a privately held company manufacturing and marketing supercapacitors using our novel aerogel carbon material. In 2001, Cooper Electronic Technologies, a Fortune 500 company, acquired PowerStor. The PowerStor supercapacitors are electrochemical double-layer capacitors that have 2,000 times the volumetric capacitance of standard aluminum electrolytic capacitors, with extremely low equivalent series-resistance values.
- Ocellus Technologies (Livermore, California) is an independent and privately held company that has developed silica and carbon aerogels based on our Lab's and its own proprietary technology for a number of customized applications.
- MicroFluidic Systems, Inc. (MfSI) (Pleasanton, California), a start-up company founded in 2001, is focused on development of automated microfluidic systems for biological assays. MfSI has been involved with developing automated DNA-based pathogen detection systems and microfluidics for the U.S. government and commercial markets. The technology licensed from our Laboratory is the Spore Lysis Microsonicator, which may be useful for spore lysis microsonication. Microsonication is presently the most effective method for breaking open (lysing) spores to extract DNA for analysis.
- DakoCytomation (Colorado) specializes in high-performance modular flow cytometers, analyzers, sorters, accessories, and upgrades. In 1994, the company introduced the MoFlo cytometer, a commercial version of the high-speed cell sorter developed by our Laboratory and used is the Human Genome Project. To date, more than 250 of these instruments have been placed in universities, research hospitals, and pharmaceutical companies in the United States, Canada, Europe, Australia, Japan, and Argentina.
- GE Interlogix-Sentrol (Oregon) is in the security and life-safety business. It manufactures motion sensors for industrial and home security, and has developed an advanced system based on our Micropower Impulse Radar technology.
- NOMOS Corporation (Pennsylvania) provides advanced radiation therapy solutions in the fight against cancer. It is the exclusive licensee for our PEREGRINE technology, which uses Monte Carlo statistical techniques to predict accurately the radiation dose to tumors and other structures within the patient's body during radiation treatment.
- ORTEC Products (Tennessee) is a world leader in the manufacture of radiation detectors, and has partnered with us to bring our portable, easy-to-use radiation detector, called RadScout, to market. This critical homeland

DakoCytomation MoFlo® high-performance cell sorter is used for biomedical research, drug discovery, cancer, HIV research, stem cell research, gene therapy, DNA diagnostics, and other applications.



security technology garnered a 2004 Excellence in Technology Transfer Award from the Federal Laboratory Consortium. The Consortium is a nationwide network of more than 600 national laboratories from 16 federal agencies that recognizes outstanding work in transferring technology from the national labs to the public and private sector. The first commercial version of RadScout, the ORTEC Detective, is now available and can be used by security and emergency response workers to quickly and accurately screen dangerous radioisotopes in luggage or shipping containers.

- Cepheid (Sunnyvale, California), whose core products are based on our technology, is a 1997 start-up company that went public in June 2000. LLNL-licensed technology is the basis for a family of products that provides researchers with quantitative DNA analysis with results in less than 30 minutes. One of Cepheid's Smart Cycler products is a portable unit that allows customers to obtain bio-analytical results when and where they are needed.

“The adaptation of LLNL technology, which is the basis of the Smart Cycler and GeneXpert® systems, has allowed Cepheid to revolutionize DNA-based testing.”

Thomas L. Gutshall,
Chairman, Cepheid

- Endress+Hauser (Indiana) is a world leader in measurement and automation. The company manufactures a level measurement device for bulk solid applications that is based on our Micropower Impulse Radar technology. This technology has been licensed extensively for many applications. Endress+Hauser is our most successful Micropower Impulse Radar licensee to date.

Appendix C. Community Educational Outreach

The diversity of our educational outreach programs that benefit our surrounding communities is highlighted below.

Teacher Development Programs

- Our Edward Teller Science and Technology Symposium is a two-day professional development program for secondary science education and community college faculty. For the past four years, the symposium has provided a bridge linking science classrooms with our research laboratories. Teachers participate in hands-on workshops where they learn to use new teaching materials based on Lab research. We register up to 150 teachers from throughout California. About 10 percent of the teachers attending are from the local area.
- Computer Technology Workshops for Educators provide teachers with skills to enable them to make better use of their school's computer technology and to

Cepheid's Smart Cycler® is a portable biodetection system, based on LLNL technology, that provides rapid DNA analysis, with results available in 30 minutes or less.





Teacher
Research
Academy.



Programs such as Crystals in the Classroom take state-of-the-art science and technology to high school classrooms.

access teaching resources available through the Internet. The workshops are offered by LLNL and reach 250 teachers each year. Tri-Valley teachers comprise approximately 25 percent of the workshop attendance.

- Teacher Focus Groups help direct our science and technology education outreach activities to the most critical needs of specific communities. Two focus group sessions were held with K–12 science teachers in the Livermore Valley Joint Unified School District (LVJUSD) in 2003–04. As a result, two teacher leadership groups—one elementary and one secondary—are being established to link the LVJUSD with our science education outreach resources.
- Crystals in the Classroom is a collaborative effort with the San Ramon Valley Unified School District to bring state-of-the-art science and technology into a high-school classroom. Our Science and Technology Education Program brought rapid growth crystal technology to two San Ramon classrooms, where each year an estimated 60 students are growing crystals as a part of advanced placement chemistry courses.
- The Edward Teller Education Center’s Teacher Research Academy is a professional development strategy providing a coherent approach to teacher development in a variety of scientific themes. Three pillars, developed in collaboration with research occurring at our Laboratory, are currently available and include biotechnology, environmental science, and biophotonics. Participating teachers receive instructional materials and equipment for use in their classrooms. Through collaboration with the Livermore Valley Joint Unified School District, teachers from Livermore and the surrounding districts are given preference in attending these programs. Eighty teachers participated in 2003, the initial year of operation. An anticipated 120 teachers are expected to participate in the summer of 2004.

Student Enrichment Programs

- School tours for local fourth and fifth grade classes are available September through May. The popular half-day morning tour, provided at no cost, includes a visit to our Discovery Center followed by an interactive, hands-on Fun with Science program. Some 1,600 students, teachers, and chaperones participate annually, with 90 percent of the attendees representing Tri-Valley schools.
- Fun with Science is a traveling science show conducted by Lab presenters at individual school sites and other public venues. Presentations demonstrate concepts in chemistry and physical and environmental sciences to entertain students and engage them in discussions about science. Our Fun with Science van visits two sites each week and will reach an estimated 8,000 K–8th grade students in 2004. All presentations are offered at no cost to the school.
- Our Laboratory co-sponsors the Tri-Valley Science and Engineering Fair (TVSEF), a science and engineering project competition for 7–12th graders. A record 362 students entered projects in 2004, representing more than 20 participating schools in Livermore, Dublin, Pleasanton, Sunol, San Ramon, and Danville. Senior sweepstakes winners are invited to compete at the Intel International Science Fair and are given summer employment at our Laboratory. The majority of student applicants come from the San Ramon, Livermore, and Pleasanton school districts.

- Science Fair 101 for Elementary and Middle Schools prepares elementary and middle school students for science fair projects. The program was created collaboratively with the LVJUSD in 2003. The curriculum was presented by middle-school science teachers from Livermore and offered to 35 students and their parents. It will be presented at four Tri-Valley locations next year to approximately 100 students and parents.
- Science Fair 101 for High School—Bootcamp in Microbiology helps students learn to create science fair projects using microbiology technology. The program was created and presented by our research scientists. Twenty students attended the pilot session at Diablo Valley College in 2004. In 2005, the curriculum will be presented at three locations in the Tri-Valley, serving an estimated 75 students.
- Livermore and Sandia National Labs co-sponsor three annual Expanding Your Horizons conferences for middle and high school girls. The conference started in 1976 at Mills College in Oakland, and in the Tri-Valley area in 1977. The 10-year-old San Joaquin conference is held at the University of the Pacific in Stockton. Expanding Your Horizons is intended to spark the interest of young women in mathematics and science through positive, hands-on experiences and career discussions with professionals. Some 1,500 girls attend the three conferences each year.
- Math Challenge is an annual event sponsored by our Laboratory, the National Nuclear Security Administration Livermore Site Office, Las Positas College, and the Edward Teller Education Center. It is designed to foster greater interest in mathematical sciences among high school students, and some 80 students participate each year.
- As part of the annual National Engineers Week, we host Engineers Day to promote careers in science and engineering for students between the ages of 10 and 14. The half-day event features a keynote speaker as well as many hands-on demonstrations and activities. More than 600 students from Livermore, Pleasanton, Dublin, Sunol, Danville, and Tracy schools attended in 2004.
- Science on Saturday is a five-week series of free lectures and demonstrations intended for students sixth grade through high school. Science on Saturday completed its eighth year in March 2004, with topics from the forefront of science and technology research in a variety of disciplines. The audience in 2004 ranged from 250 to 450 per lecture and was comprised primarily of middle and high school students, parents, and teachers from the Tri-Valley. Science on Saturday has been extended by popular demand to the Central Valley area with presentations planned for Tracy, Merced, Coalinga, Delhi, Fresno, and Bakersfield. Those presentations will be conducted in collaboration with UC Merced and Merced College to help develop college-bound student interest in science and technology.
- Science Chat, initiated in 2004, is a one-hour informal discussion following the Science on Saturday presentation. High school and community college students have the opportunity to question presenters about their research and career choices to help determine if a technical career may be the right choice



Science Fair 101 helps students and parents with science projects.



Expanding your Horizons Conference held at Mills College.



Exciting demonstrations at Engineers Day.

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All smiles for a Livermore middle school student at TVSEF 2004.

“LLNL has clearly recognized the importance of preparing the minds of the next generation of thinkers and scientists. Over the years it has developed close working relationships with various campuses of the University of California, California State University, and the California Community Colleges as well as the K-12 systems of the State.”

*David Mertes,
Chairman of the Board of Directors, ValleyCare Health System and
a former Chancellor of the California Community Colleges*

for them. Attendance for the first year’s Science Chat sessions ranged from 15 to 40 students and teachers.

- Our Laboratory assisted the Tri-Valley Regional Occupational Program’s MECCA Project (Making Electives Count for Career Advancement) by participating in an evening science workshop for middle school girls. The event paired a public school teacher with a Lab scientist and provided hands-on instruction to the young women. MECCA, which serves the Livermore, Pleasanton, and Dublin school districts, is intended to encourage female students to pursue math, science, and technology courses and careers.
- Our Edward Teller Science Scholars Award, new in 2004 and created in memory of Dr. Edward Teller, recognizes two seniors in the Livermore Valley Joint Unified School District—one from each high school—for outstanding science research. Selections are made by Livermore School District staff. The \$500 scholarships are provided to students when they enroll in a post-secondary educational institution.
- Lab employees actively participate in the California Cooperative Education and Internship Association, Bay Area Science and Innovation Consortium, the Tri-Valley Business Council, the Tri-Valley Education Collaborative, the Livermore Chamber of Commerce Education Committee, the Livermore School District’s Diversity Committee, and committees sponsored by the San Joaquin County Office of Education, among others. They also generously volunteer at local schools throughout the school year. Examples include helping with mock job interviews for high school students, serving as judges for school science fairs, participating in district-wide events like San Joaquin’s “Dinner with a Scientist” and participating in high school career fairs. They also serve as classroom guest speakers, as resources allow.
- Lab retirees also make important contributions to education. An example is Teaching Opportunities for Partners in Science, (TOPScience) where retired scientists and engineers participate as education partners in schools. They assist in classroom presentations, family science nights, field trips, science clubs, and career days. The partners act as science and math content resources for classroom teachers to improve the quality of elementary and middle school science education. They volunteer for a minimum of 80 hours during a school year, or about 10 hours for eight months. This valuable program has been successfully serving between 25 to 40 schools a year for the past ten years in Alameda, San Joaquin, Tuolumne, Calaveras, and Stanislaus counties.

Appendix D.

Environmental Community Relations

Our Laboratory has numerous forums for public participation on environmental, safety, and health issues. Key examples include, but are not limited to, the following:

- The Main Site Community Work Group, voluntarily created by our Laboratory, provides public input on environmental restoration activities and priorities at our main site. Members represent broad sectors of the local community and representatives of regulatory agencies.
- Meetings, started voluntarily, are conducted with Tri-Valley Communities Against a Radioactive Environment (CAREs) to obtain information on public concerns early on in the environmental restoration process. Tri-Valley CAREs is a recipient of technical assistance grants from the U.S. Environmental Protection Agency. Tri-Valley CAREs is also represented on our Main Site Community Work Group. They are invited to attend other Laboratory environmental, safety, and health-related public involvement and participation activities.
- We continue to participate in a public forum for discussing community and public health concerns about Laboratory environmental restoration activities and operations, including contamination in Livermore's Big Trees Park, local groundwater, and Site 300 issues. This effort is part of a national program by which DOE funds the federal Agency for Toxic Substances and Disease Registry to conduct a public health assessment at Superfund sites. The Livermore team consists of some 20 people and includes representatives from our Laboratory, the City of Livermore, the California Department of Health Services, the Agency for Toxic Substances and Disease Registry, Tri-Valley CAREs, Western States Legal Foundation, and Physicians for Social Responsibility.
- We communicate directly with neighbors living within about one-half mile of the main Livermore site and those owning property near Site 300. Individual letters apprising neighbors of events or activities that could impact them are sent on a timely, as-needed basis. These letters also solicit any concerns about the Laboratory.
- Targeted, focused community outreach efforts directed at key local organizations (e.g., city officials and administrators, planning departments, media, realtors, and developers) are maintained to determine and resolve environmental concerns. Periodic personal visits to discuss particular concerns are also undertaken.

Our *Site Annual Environmental Report*, prepared each year by the Environmental Protection Department, summarizes the results of environmental monitoring and provides an assessment of the impact of LLNL operations on the environment and the public. Public notices are used to help



Regular inspections by the Lab of sanitary sewer discharges protect public health and the environment.



Briefing the Valley Study Group on environmental issues.



Drilling well to monitor ground water quality.

focus attention on key issues and documents that are made available through our public repositories. A publicly accessible Environmental Information Repository, located at our Discovery Center, contains a collection of environmental review and compliance reports for the main site and Site 300. Key documents are also kept at the Livermore and Tracy main libraries.

Our environmental information Web page includes all public access documents as well as historical records, recent communications with stakeholders, and a Web link to encourage questions (<http://www-envirinfo.llnl.gov/>). An Environmental Community Relations response telephone number is publicized to receive and deal with community concerns. In addition, we provide and distribute an Environmental Community Letter as needed, but at least annually, to communicate information about its environmental activities. It is also used to invite comment and concerns regarding LLNL environmental initiatives.

In addition to our responsibilities to employees and neighboring communities, we must ensure compliance with the National Environmental Policy Act, the California Environmental Quality Act, and related federal and state requirements. Environmental protection efforts include environmental monitoring and risk assessment and analysis, as well as major endeavors in environmental restoration—principally groundwater cleanup—and hazardous waste reduction and disposition. Direct contact with regulatory agencies, including the U.S. Environmental Protection Agency, California Environmental Protection Agency, Department of Toxic Substances Control, and the regional water and air-quality control boards, is maintained throughout the year.

“We have enjoyed an excellent and productive relationship with the Laboratory on addressing groundwater quality issues. We are most interested in continuing that relationship to the benefit of the environment and the citizens of California.”

James Giannopoulos,
Professional Engineer, Groundwater Quality Branch, State Water Resources Control Board, California Environmental Protection Agency

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Waste samples are analyzed as part of the waste treatment and disposal process.

PRIMARY AUTHOR:

Ann Willoughby
Public Affairs Office

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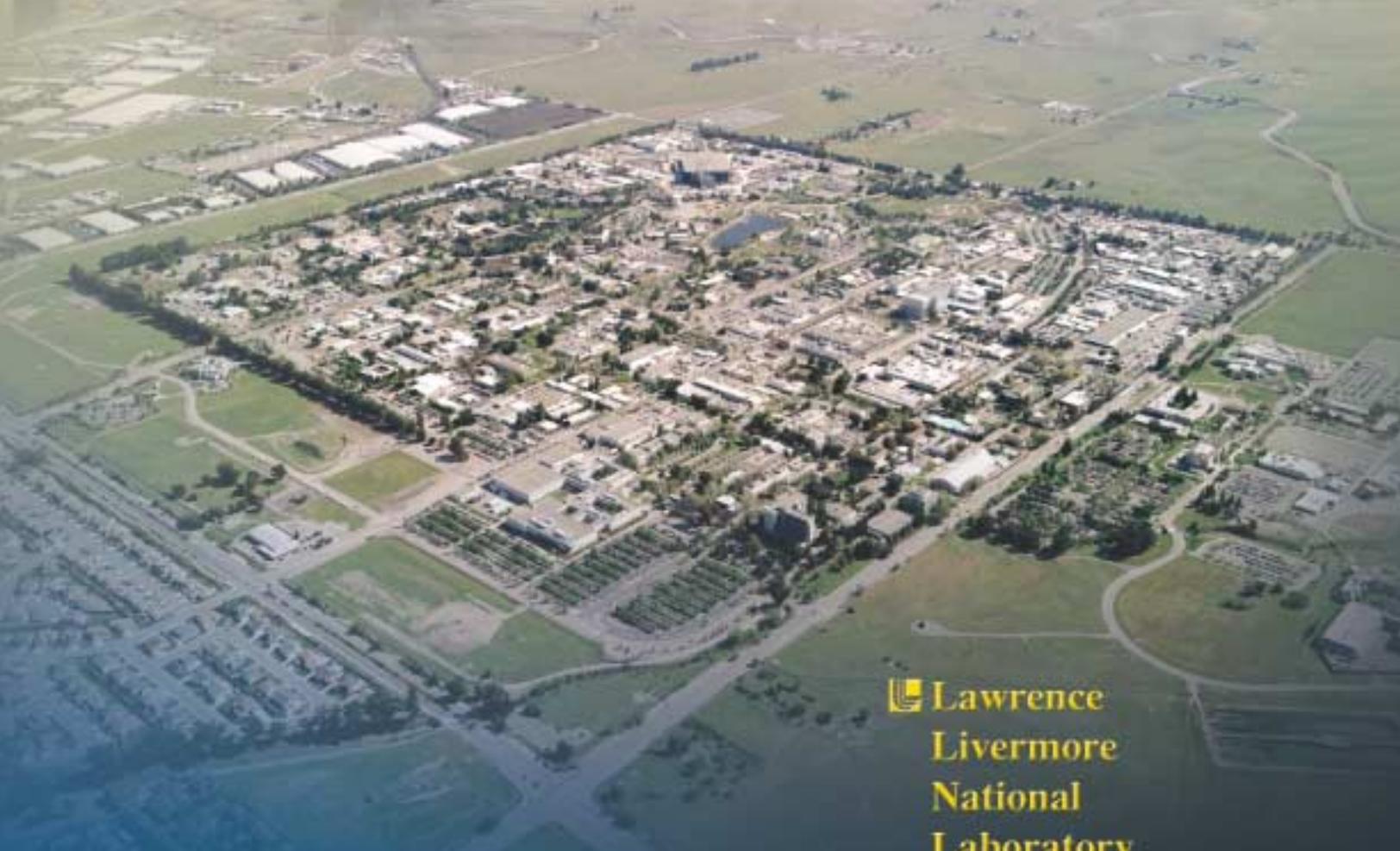




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Community Report



 Lawrence
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